

In the Claims:

Listing of all claims:

1-5. Cancelled.

1                   6.   (Original)       An apparatus for feeding wire  
2   at a controllable wire feed speed to a weld comprising:  
3                   a wire feed motor, having a wire feed speed;  
4                   a controller means for controlling the motor  
5   speed, wherein the controller means is coupled to the motor;  
6   and  
7                   an input means for allowing a user to select a  
8   wire feed speed;  
9                   wherein the controller means includes an input  
10   circuit coupled to the input means, and wherein the input  
11   circuit includes non-linear means for creating a non-linear  
12   relationship between a setting of the input means and the  
13   wire feed speed.

1                   7.   (Original)       The apparatus of claim 6 wherein  
2   the input means includes a potentiometer mounted on a front  
3   panel.

1                   8.   (Original)       The apparatus of claim 7 where the  
2   input circuit includes a gain stage means for providing at least  
3   two gains.

1                   9.   (Original)       The apparatus of claim 7 wherein  
2   the non-linear means includes a gain stage means for providing a  
3   varying gain.

1                   10. (Original)       A method of controlling wire  
2   feeder comprising the steps of:

3 providing the wire at a controlled speed;  
4 providing a user input; and  
5 creating a non-linear relationship between the  
6 user input and the wire feed speed.

1 11. (Original) The method of claim 10 wherein the  
2 step of providing a user input includes providing a potentiometer  
3 mounted on a front panel.

1 12. (Original) The method of claim 11 where the  
2 step of creating includes the step of providing at least two  
3 gains in a gain stage connected to the user input.

1 13. (Original) An apparatus for controlling  
2 the rate at which wire is fed to a weld, comprising:  
3 a wire feed motor output;  
4 a selectable wire feed speed input; and  
5 an input circuit coupled to the selectable wire  
6 feed speed input, and wherein the input circuit includes a  
7 non-linear stage such that the relationship between the  
8 selectable wire feed speed input and the wire feed output is  
9 not linear.

1 14. (Original) The apparatus of claim 13 wherein  
2 the selectable wire feed speed input includes a potentiometer  
3 mounted on a front panel.

1 15. (Original) The apparatus of claim 14 where  
2 the input circuit includes a plurality of gain stages each having  
3 gain over one of a plurality of input ranges.

1 16. (Original) The apparatus of claim 14 wherein  
2 the non-linear stage includes a gain stage having a varying gain.

1                   17. (Original)           The apparatus of claim 13 wherein  
2   the controller directly controls wire feed speed.

1                   18. (Original)           An apparatus for controlling  
2   the rate at which wire is fed to a weld comprising:  
3                   a wire feed motor output, corresponding to a wired  
4   feed speed;  
5                   controller means for controlling the motor speed,  
6   wherein the controller means is coupled to the motor output;  
7   and  
8                   an input means for allowing a user to select a  
9   wire feed speed;  
10                  wherein the controller means includes an input  
11   circuit coupled to the input means, and wherein the input  
12   circuit includes non-linear means for creating a non-linear  
13   relationship between a setting of the input means and the  
14   motor output.

1                   19. (Original)           The apparatus of claim 18 wherein  
2   the input means includes a potentiometer mounted on a front  
3   panel.

1                   20. (Original)           The apparatus of claim 19 where  
2   the input circuit includes a gain stage means for providing at  
3   least two gains.

1                   21. (Original)           The apparatus of claim 19 wherein  
2   the non-linear means includes a gain stage means for providing a  
3   varying gain.

1                   22. (Original)           An apparatus for arc welding  
2   comprising:  
3                   a welding power supply connected to provide  
4   welding power to the arc;

5 a wire feed motor, disposed to provide wire to the  
6 arc and having a wire feed speed;  
7 a controller, coupled to the wire feed motor; and  
8 a selectable wire feed speed input;  
9 wherein the controller includes an input circuit  
10 coupled to the selectable wire feed speed input, and wherein  
11 the input circuit includes a non-linear stage such that the  
12 relationship between the selectable wire feed speed input  
13 and the wire feed speed is not linear.

1 23. (Original) The apparatus of claim 22 wherein  
2 the selectable wire feed speed input includes a potentiometer  
3 mounted on a front panel.

1 24. (Original) The apparatus of claim 23 where  
2 the input circuit includes a plurality of gain stages each having  
3 gain over one of a plurality of input ranges.

1 25. (Original) The apparatus of claim 23 wherein  
2 the non-linear stage includes a gain stage having a varying gain.

1 26. (Original) The apparatus of claim 22 wherein  
2 the controller directly controls wire feed speed.